REMARKS

The Final Office Action mailed June 14, 2006, has been received and reviewed. Claims 1 through 19 are currently pending in the application. Claims 1 through 19 stand rejected. Applicant proposes to amend claims 1, 9, and 16, and respectfully request reconsideration of the application as proposed to be amended herein.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on European Patent Application No. EP1301491 to Choy in View of U.S. Patent No. 5,568,173 to Leenders et al.

Claims 1 through 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Choy (European Patent Application No. EP1308491) in view of Leenders et al. (U.S. Patent No. 5,568,173). Applicant respectfully traverses this rejection, as hereinafter set forth.

> M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:
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> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

The 35 U.S.C. § 103(a) obviousness rejections of claims 1-19 are improper because the cited references to not teach all of the claim limitations, there is no motivation to combine the different teachings in the references, and the references (when read in their entirety) teach away from the invention.

Independent claim 1 recites a method of enhancing color space comprising depositing dye-based ink and a charged polymer fixer on a print medium in a print zone having a temperature between about 45° C and about 85° C. Independent claim 9 recites a method of inkjet printing comprising:

underprinting a charged polymer fixer fluid on a print medium in a print zone; depositing dye-based ink over the fixer fluid on the print medium; and heating the print zone to a

temperature between about 45° C and about 85° C during the underprinting and the depositing. Independent claim 16 recites a printing system capable of maintaining or enhancing chroma independent of increased ink application, the system comprising: a print zone configured to be heated up to about 85° C; and a pen set configured to apply dye-based ink and a charged polymer fixer to a print medium in the heated print zone.

Choy is relied upon as allegedly teaching an apparatus and method of enhancing color space having a pen set for depositing dye based ink and a fixer on a print medium comprising plain paper and applying heat to the print zone after or prior the depositing of the dye based ink. The Office Action acknowledges that Choy fails to teach the temperature to be between about 45 and 85 degrees. Applicant respectfully disagrees with the Examiner's characterization of Choy, but agrees that Choy fails to teach the particular temperatures recited in the pending claims.

Specifically, as discussed in the Background of the Invention, Choy deals with overcoming "short 'drytimes' *(e.g.,* less than about 1 s)" in order to "reduce surface bleed, reduce the potential for smudging, and shorten the overall print time," and teaches that "the drytime of an image is influenced by a number of factors that include the chemical composition of the deposited ink and the physical and chemical characteristics of the print medium" and that it would be desirable to provide "ink compositions that perform well in ink-jet printers on both a short and long term and show reasonable drytimes when printed on hydrophobic media." (Choy at paras. [0001] and [0007]) (emphasis added).

As expressly stated in the Summary of the Invention, Choy addresses and solves the short drytime problem by providing "methods of printing inventive inks and fixers on hydrophobic media." (Id. at paras. [0025]) (emphasis added). The methods include use of "ink compositions that include a water soluble dye and a vehicle, the vehicle including water, a glycol ether, a humectant, and a non-ionic surfactant." (Id. at para. [0008]) (emphasis added). Choy "further provides fixer compositions for stabilizing inventive inks on hydrophobic media that include a fixing agent and a vehicle, the vehicle including water, a glycol ether, a glycol ether ester or mixture thereof, a humectant, and a non-ionic surfactant." (Id. at para. [0008]) (emphasis added). More specifically, Choy teaches that the glycol ethers or glycol ether esters are added to provide "a balance of hydrophilic and hydrophobic character." (Id. at para. [0018]) (emphasis added). Thus, Choy is drawn to methods of

reducing surface bleed, potential for smudging, and reduction of the overall print time in hydrophobic media when using dye based (hydrophilic) inks. It overcomes this problem by teaching use of a glycol ether, a glycol ether ester or mixture thereof, a humectant, and a non-ionic surfactant to provide the dye-based ink with a balance of hydrophilic and hydrophobic character in order to fix the dye-based ink on the hydrophobic media and reduce smudging and print time. Choy does not teach or suggest the use of depositing dye-based ink and fixer on a print medium in a print zone that is heated to a temperature between about 45 and 85 degrees C., instead teaching another solution to the problem of printing on a hydrophobic media, that is, use of a glycol ether, a glycol ether ester or mixture thereof, a humectant, and a non-ionic surfactant. As such Choy does not teach or suggest all of the claim elements and, instead, teaches a different solution to a different problem (printing on hydrophobic media with hydrophilic inks). More specifically, Choy relies upon use of a glycol ether, a glycol ether ester or mixture thereof as a fixer to accomplish this result. In contrast, independent claims 1, 9, and 16 require a dye-based ink and a charged polymer fixer on a print medium, along with a print zone having a temperature between about 45° C and about 85° C.

Leenders et al. is relied upon as teaching use of a temperature between about 45 and 85 degrees C. after depositing ink on a medium. However, Leenders et al. does not overcome the deficiencies of Choy, as discussed above. Additionally, Leenders et al. teaches away from Choy and, therefore, provides no motivation to be combined with Choy. The object of Leenders et al. is to provide an ink jet printing method having enlarged gray scale reproduction capabilities. (Leenders et al. at Col. 3, line 65 to Col. 4, line 7). This object is achieved by using a plurality of inks having different concentrations of two reagents (reagents A and B). (Id. at Col. 4, lines 10-56). Reactants A and B are color reaction agents for metal ions (Id. at Col. 5, lines 49-52). More specifically, the "method of [Leenders et al.] produces black images of high optical density when "substances A and B represent a chemically reactive system mainly comprising a substantially colorless metal salt and a substantially colorless reducing agent producing therewith a substantially black deposit of finely divided metal in a redox reaction." (Id. at Col. 5, lines 34-42) (emphasis added).

The ink-receiving material formed by the method of Leenders et al. is a "heat-developable photosensitive layer comprising a substantially light-insensitive silver salt, an organic reducing agent and a light-sensitive heavy metal compound, preferably light-sensitive

silver halide, which upon exposure to activating electromagnetic radiation forms metal nuclei that upon heating of said layer initiate a redox reaction between the light-insensitive silver salt and the reducing agent applied by ink jet." (Id. at Col. 10, lines 4-13). Upon heating, the redox reaction is activated to form a silver metal image. (Id. at Col. 10, lines 22-26). After deposition of the ink image(s), the receiving material is subjected to heat treatment in the range of 40 to 160 degrees C. (preferably 100 degrees C.) to trigger the redox reaction and "obtain a desired optical density increase." (Id. at Col. 11, lines 6-16).

Thus, Leenders et al. provides no motivation for combination with Choy, as Choy attempts to resolve the problem of using dye based (hydrophilic) inks on hydrophobic media. Choy overcomes this problem by teaching use of a glycol ether, a glycol ether ester or mixture thereof, a humectant, and a non-ionic surfactant to provide the dye-based ink with a balance of hydrophilic and hydrophobic character in order to fix the dye-based ink on the hydrophobic media. In contrast, Leenders et al. aims to provide an ink jet printing method having enlarged gray scale reproduction capabilities. Leenders et al. resolves this problem by using a metal salt and a substantially colorless reducing agent to produce a substantially black deposit of finely divided metal in a redox reaction, which is activated by heat to form a silver image.

Even assuming that there was some motivation for combining Choy and Leenders et al., which there is not, Leenders et al. does not overcome the deficiencies of Choy, *i.e.*, a teaching or suggestion of a dye-based ink and a charged polymer fixer on a print medium, along with a print zone having a temperature between about 45° C and about 85° C., as required in independent claims 1, 9, and 16.

Additionally, like Choy, Leenders et al. does not attempt to solve the same problem as the present invention, nor does it (either alone or in combination with Choy) utilize the combination of a dye-based ink and a charged polymer fixer, together with heating, to provide enhanced color space. In fact, Leenders et al. teaches away from such a solution by providing an entirely different solution to a different problem.

The nonobviousness of independent claims 1, 9, and 16 preclude a rejection of claims 2-8, 10-15, and 17-19 which depend therefrom because a dependent claim is obvious only if the independent claim from which it depends is obvious. *See* In re Fine, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03.

In view of the foregoing, applicant respectfully requests withdrawal of the present rejections and allowance of the pending claims.

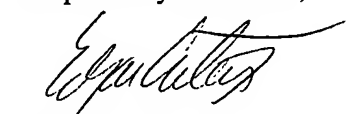
ENTRY OF AMENDMENTS

The proposed amendments to claims 1, 9, and 18 above should be entered by the Examiner because the amendments are supported by the as-filed specification and drawings and do not add any new matter to the application. Further, the amendments do not raise new issues or require a further search. Finally, if the Examiner determines that the amendments do not place the application in condition for allowance, entry is respectfully requested upon filing of a Notice of Appeal herein.

CONCLUSION

Claims 1-19 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicant's undersigned attorney.

Respectfully submitted,



Edgar R. Cataxinos
Registration No. 39,931
Attorney for Applicant
TRASKBRITT
P.O. Box 2550
Salt Lake City, Utah 84110-2550
Telephone: 801-532-1922

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